

CLAIMS

What is claimed is:

- 1           1.     A method for using a scanning device, comprising:  
2                 decelerating an object from moving at a first substantially constant  
3                 speed to a stop;  
4                 causing relative movement between the object and an optical sensor;  
5                 and  
6                 measuring reflected light from a first section of the object that moved  
7                 past the optical sensor during decelerating the object.
- 1           2.     The method as recited in claim 1, further comprising:  
2                 generating a first set of data from measuring the reflected light.
- 1           3.     The method as recited in claim 2, wherein:  
2                 causing relative movement includes moving the optical sensor in a first  
3                 direction the object moves through the scanning device during scanning for a  
4                 first distance substantially equal to a sum of an acceleration distance of the  
5                 object and a deceleration distance of the object;  
6                 causing relative movement includes moving the first section of the  
7                 object past the optical sensor at the first substantially constant speed in the first  
8                 direction; and  
9                 the object includes media.
- 1           4.     The method as recited in claim 3, further comprising:  
2                 measuring the reflected light from the first section of the object during  
3                 decelerating the object to generate a second set of data; and  
4                 replacing the second set of data with the first set of data.
- 1           5.     The method as recited in claim 2, wherein:  
2                 causing relative movement includes moving the object in a first  
3                 direction, opposite a second direction the object moves through the scanning

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4 device during scanning, for a first distance substantially equal to a sum of an  
5 acceleration distance of the object and a deceleration distance of the object;  
6 causing relative movement includes moving the first section of the  
7 object past the optical sensor at the first substantially constant speed in the  
8 second direction; and  
9 the object includes media.

1 6. The method as recited in claim 5, further comprising:  
2 measuring the reflected light from the object during decelerating the  
3 object to generate a second set of data; and  
4 replacing the second set of data with the first set of data.

1 7. The method as recited in claim 2, wherein:  
2 causing relative movement includes moving the optical sensor in a first  
3 direction, opposite a second direction the object moves through the scanning  
4 device during scanning, for a first distance substantially equal to a sum of an  
5 acceleration distance of the optical sensor and an acceleration distance of the  
6 object;  
7 causing relative movement includes moving the optical sensor in the  
8 second direction at a second substantially constant speed for a second distance  
9 substantially equal to a sum of the acceleration distance of the object and the  
10 deceleration distance of the object;  
11 causing relative movement includes moving the optical sensor in the  
12 first direction for a third distance substantially equal to a sum of a deceleration  
13 distance of the optical sensor and a deceleration distance of the object; and  
14 the object includes media.

1 8. The method as recited in claim 7, further comprising:  
2 measuring the reflected light from a second section of the object  
3 corresponding to the acceleration distance of the object that the optical sensor  
4 moved past when moving the first distance and the second distance.

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1           9. The method as recited in claim 8, further comprising:  
2           measuring the reflected light from the first section of the object during  
3           decelerating the object to generate a second set of data; and  
4           replacing the second set of data with the first set of data.

1           10. The method as recited in claim 2, wherein:  
2           causing relative movement includes moving the optical sensor in a first  
3           direction the object moves through the scanning device during scanning for a  
4           first distance substantially equal to a sum of an acceleration distance of the  
5           optical sensor and a deceleration distance of the object;  
6           causing relative movement includes moving the optical sensor in a  
7           second direction, opposite the first direction, at a second substantially constant  
8           speed for a second distance substantially equal to a sum of the deceleration  
9           distance of the object and an acceleration distance of the object;  
10          causing relative movement includes moving the optical sensor in the  
11          first direction for a third distance substantially equal to a sum of a deceleration  
12          distance of the optical sensor and the acceleration distance of the object; and  
13          the object includes media.

1           11. The method as recited in claim 10, further comprising:  
2           measuring the reflected light from a second section of the object  
3           corresponding to the acceleration distance of the object that the optical sensor  
4           moved past when moving the first distance and the second distance.

1           12. The method as recited in claim 11, further comprising:  
2           measuring the reflected light from the object during decelerating  
3           the object to generate a second set of data; and  
4           replacing the second set of data with the first set of data.

1           13. A system for reducing artifacts from scanning an object,

2 comprising:  
3 a moving mechanism to selectively move the object at a first  
4 substantially constant speed during scanning;  
5 a scanning mechanism including an optical sensor, with the scanning  
6 mechanism to selectively move the optical sensor at a second substantially  
7 constant speed during scanning and with the optical sensor configured for  
8 measuring reflected light from the object; and  
9 a controller coupled to the moving mechanism and the scanning  
10 mechanism with the controller configured to actuate the moving mechanism to  
11 selectively move the object and with the controller configured to actuate the  
12 scanning mechanism to selectively move the optical sensor.

1 *2* 14. The system as recited in claim *13*, wherein:  
2 the controller includes a configuration to actuate the scanning  
3 mechanism to move the optical sensor in a first direction the object moves  
4 during scanning for a first distance substantially equal to a sum of a deceleration  
5 distance of the object and an acceleration distance of the object;  
6 the controller includes a configuration to actuate the moving  
7 mechanism to move a first section of the object corresponding to the  
8 deceleration distance of the object past the optical sensor at the first  
9 substantially constant speed in the first direction;  
10 the controller includes a configuration to measure the reflected light  
11 from the first section with the optical sensor; and  
12 the object includes media.

1 *3* 15. The system as recited in claim *13*, wherein:  
2 the controller includes a configuration to actuate the moving  
3 mechanism to move the object in a first direction opposite a second direction  
4 that the object moves during scanning for a first distance substantially equal to  
5 a sum an acceleration distance of the object and a deceleration distance of the  
6 object;

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7 the controller includes a configuration to actuate the moving  
8 mechanism to move a first section of the object corresponding to the  
9 deceleration distance of the object past the optical sensor at the first  
10 substantially constant speed in the second direction;  
11 the controller includes a configuration to measure the reflected light  
12 from the first section with the optical sensor; and  
13 the object includes media.

1 ~~4~~ 16. The system as recited in claim 13, wherein:  
2 the controller includes a configuration to actuate the scanning  
3 mechanism to move the optical sensor in a first direction, opposite a second  
4 direction the object moves during scanning, for a first distance substantially  
5 equal to a sum of an acceleration distance of the optical sensor and an  
6 acceleration distance of the object;  
7 the controller includes a configuration to actuate the scanning  
8 mechanism to move the optical sensor in the second direction for a second  
9 distance substantially equal to a sum of the acceleration distance of the object  
10 and a deceleration distance of the object at the second substantially constant  
11 speed;  
12 the controller includes a configuration to measure the reflected light  
13 with the optical sensor from a first section of the object corresponding to the  
14 deceleration distance of the object and from a second section of the object  
15 corresponding to the acceleration distance of the object;  
16 the controller includes a configuration to actuate the scanning  
17 mechanism to move the optical sensor in the first direction for a third distance  
18 substantially equal to a sum of a deceleration distance of the optical sensor; and  
19 the object includes media.

1 ~~5~~ 17. The system as recited in claim 13, wherein:  
2 the controller includes a configuration to actuate the scanning  
3 mechanism to move the optical sensor in a first direction the object moves

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4 during scanning for a first distance substantially equal to a sum of a deceleration  
5 distance of the object and an acceleration distance of the optical sensor;

6 the controller includes a configuration to actuate the scanning  
7 mechanism to move the optical sensor in a second direction, opposite the first  
8 direction, for a second distance substantially equal to a sum of the deceleration  
9 distance of the object and an acceleration distance of the object at the second  
10 substantially constant speed;

11 the controller includes a configuration to measure the reflected light  
12 with the optical sensor from a first section of the object corresponding to the  
13 deceleration distance of the object and from a second section of the object  
14 corresponding to the acceleration distance of the object;

15 the controller includes a configuration to actuate the scanning  
16 mechanism to move the optical sensor in the first direction for a third distance  
17 substantially equal to a deceleration distance of the optical sensor and the  
18 acceleration distance of the object; and

19 the object includes media.

1 <sup>6</sup>18. A scanning device for generating a digital representation of an  
2 image on media, comprising:

3 a scanning mechanism including an optical sensor with the scanning  
4 mechanism configured for selectively moving at a first substantially constant  
5 speed during scanning;

6 a moving mechanism configured for selectively moving the media at a  
7 second substantially constant speed during scanning; and

8 a controller coupled to the scanning mechanism and the moving  
9 mechanism, with the controller configured to actuate the scanning mechanism  
10 to move the optical sensor and with the controller configured to actuate the  
11 moving mechanism to move the media.

1 <sup>7</sup>18. The scanning device as recited in claim 18, wherein:  
2 the controller includes a configuration to actuate the scanning

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3 mechanism to move the optical sensor in a first direction the media moves  
4 during scanning for a first distance substantially equal to a sum of a deceleration  
5 distance of the media and an acceleration distance of the media;  
6 the controller includes a configuration to actuate the moving  
7 mechanism to move a first section of the media corresponding to the  
8 deceleration distance of the media past the optical sensor at the first  
9 substantially constant speed in the first direction; and  
10 the controller includes a configuration to measure reflected light from  
11 the first section with the optical sensor.

1 8. 20. The scanning device as recited in claim 18, wherein:  
2 the controller includes a configuration to actuate the moving  
3 mechanism to move the media in a first direction opposite a second direction  
4 that the media moves during scanning for a first distance substantially equal to a  
5 sum an acceleration distance of the media and a deceleration distance of the  
6 media;  
7 the controller includes a configuration to actuate the moving  
8 mechanism to move a first section of the media corresponding to the  
9 deceleration distance of the media past the optical sensor at the first  
10 substantially constant speed in the second direction; and  
11 the controller includes a configuration to measure reflected light from  
12 the first section with the optical sensor.

1 9. 21. The scanning device as recited in claim 18, wherein:  
2 the controller includes a configuration to actuate the scanning  
3 mechanism to move the optical sensor in a first direction, opposite a second  
4 direction the media moves during scanning, for a first distance substantially  
5 equal to a sum of an acceleration distance of the media and an acceleration  
6 distance of the optical sensor;  
7 the controller includes a configuration to actuate the scanning  
8 mechanism to move the optical sensor in the second direction for a second

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9 distance substantially equal to a sum of the acceleration distance of the media  
10 and a deceleration distance of the media at the second substantially constant  
11 speed;

12 the controller includes a configuration to measure reflected light with  
13 the optical sensor from a first section of the media corresponding to the  
14 deceleration distance of the media and from a second section of the media  
15 corresponding to the acceleration distance of the media; and

16 the controller includes a configuration to actuate the scanning  
17 mechanism to move the optical sensor in the first direction for a third distance  
18 substantially equal to a sum of a deceleration distance of the optical sensor and  
19 the deceleration distance of the media.

1 ~~1022.~~ The scanning device as recited in claim ~~18~~<sup>6</sup> wherein:  
2 the controller includes a configuration to actuate the scanning  
3 mechanism to move the optical sensor in a first direction the media moves  
4 during scanning for a first distance substantially equal to a sum of an  
5 acceleration distance of the optical sensor and a deceleration distance of the  
6 media;

7 the controller includes a configuration to actuate the scanning  
8 mechanism to move the optical sensor in a second direction, opposite the first  
9 direction, for a second distance substantially equal to the deceleration distance  
10 of the media and an acceleration distance of the media at the second  
11 substantially constant speed;

12 the controller includes a configuration to measure reflected light with  
13 the optical sensor from a first section of the media corresponding to the  
14 deceleration distance of the media and from a second section of the media  
15 corresponding to the acceleration distance of the media; and

16 the controller includes a configuration to actuate the scanning  
17 mechanism to move the optical sensor in the first direction for a third distance  
18 substantially equal to a deceleration distance of the optical sensor and the  
19 acceleration distance of the media.

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